

3001 SNF 26.

~~Top Secret~~

No Foreign Dissem



DIRECTORATE OF
SCIENCE & TECHNOLOGY

EO 12958 3.3(b) (1) > 25Y

BLACK SHIELD
Reconnaissance Missions
1 January - 31 March 1968

Handle via

Byeman Comint

Channels Jointly

APPROVED FOR RELEASE
DATE: AUG 2007

~~Top Secret~~

OX CART

BYE No. 1330/68
DST-BS/BYE/68-2
30 April 1968

Copy No. 2

PREFACE

This report is the third in a series of resumes of the BLACK SHIELD reconnaissance program. This third resume spans the period from 1 January to 31 March 1968 and includes missions flown over North Vietnam and North Korea.

CONTENTS

| | Page |
|----------------------------|------|
| PREFACE | iii |
| SUMMARY | 1 |
| MISSION ANALYSIS | 3 |
| BX6842 | 3 |
| BX6843 | 7 |
| BX6847 | 8 |
| BX6851 | 10 |
| BX6853 | 11 |
| BX6856 | 13 |

APPENDICES

| | |
|--|----|
| I. BLACK SHIELD operational missions alerted between 1 January and 31 March 1968 | 19 |
| II. COMIREX targets covered by BLACK SHIELD missions over North Korea 1 January - 31 March 1968 | 20 |
| III. COMIREX targets covered by BLACK SHIELD missions over North Vietnam 1 January - 31 March 1968 | 27 |
| IV. <div style="border: 1px solid black; height: 30px; width: 550px; display: inline-block;"></div> | |

FIGURES

| | |
|--|----|
| 1. Mission BX6842, flown 4 January 1968 | 3 |
| 2. Photography of missile launched by site 267 | 5 |
| 3. Signal and vehicle flight environment | 6 |
| 4. Mission BX6843, flown 5 January 1968 | 7 |
| 5. Mission BX6847, flown 26 January 1968 | 9 |
| 6. Mission BX6851, flown 16 February 1968 | 10 |
| 7. Mission BX6853, flown 19 February 1968 | 12 |
| 8. Mission BX6856, flown 8 March 1968 | 13 |
| 9-11. Samples of mission photography | 15 |

BLACK SHIELD Reconnaissance Missions

1 January - 31 March 1968

SUMMARY

Fifteen BLACK SHIELD high-altitude reconnaissance missions were alerted during the period from 1 January to 31 March 1968. Six of the 15 missions were flown, four over North Vietnam and two over North Korea. Eight missions were cancelled due to weather conditions, and approval for one Korean mission was not obtained. (Appendix I lists these missions and related events.)

BLACK SHIELD photography of North Vietnam through 31 March 1968 revealed no evidence of surface-to-surface ballistic missiles, equipment, or facilities. Mission BX6843 photographed two suspect surface-to-surface (cruise) missile sites near Thanh Hoa. One site was unoccupied, and the second contained a few small unidentified objects.

The BLACK SHIELD program provided initial baseline coverage of North Korea on missions BX6847 and BX6853, with readable coverage of 70 percent of the country. These two missions supplied current photography of North Korean industrial and transportation systems and updated the existing order of battle. The ability of the BLACK SHIELD program to react rapidly is demonstrated by photographs of the USS Pueblo at anchor in Wonsan Bay obtained on mission BX6847. This mission was flown on 26 January, three days after the USS Pueblo was seized and one day after approval was granted. (Appendix II is a listing of the COMIREX targets photographed over North Korea.)

The BLACK SHIELD program has continued to supply good coverage of North Vietnam, particularly order of battle information of fighter aircraft and surface-to-air missile defenses. The program has contributed substantially to bomb damage assessment of point targets and of the interdiction effort directed against North Vietnamese road, rail, and water transportation systems. BLACK SHIELD missions have identified new targets and provided information [redacted]

[redacted] The tri-border area of South Vietnam, Laos, and Cambodia has also been covered well by BLACK SHIELD photography. BLACK SHIELD mission BX6856, flown over Khe Sanh and the border area of South Vietnam, provided strategic information of the hostile troop build-up, supply, and infiltration routes. (COMIREX targets photographed over North Vietnam are listed in Appendix III.)

All of the four North Vietnamese missions were tracked by [redacted] North Vietnamese air surveillance facilities. One unsuccessful surface-to-air missile (SAM) was launched at the vehicle of mission BX6842. The missile fired during the overflight was launched with the Fan Song radar in low PRF (first observed on missions BX6732 and BX6734). This was the first known instance of a Soviet SA-2 missile's having been guided by information derived from the Fan Song guidance radar operating in the low-PRF mode.

[redacted]

[redacted]

[redacted] The initial evidence of EW tracking by the North Koreans occurred on BX6853 when the Maryong-San radar station

[redacted]

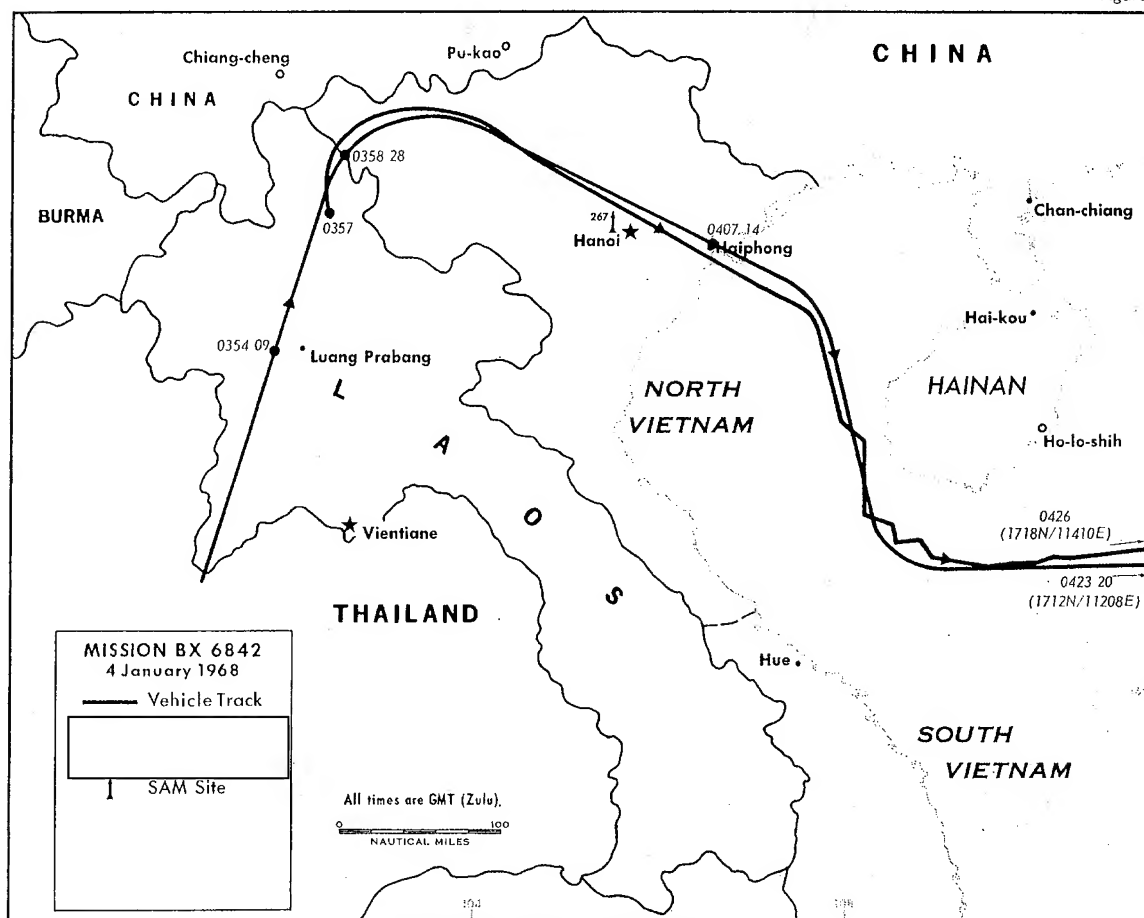
MISSION ANALYSIS

BX6842

BLACK SHIELD mission BX6842 was a single-pass, high-altitude reconnaissance mission flown over North Vietnam on 4 January 1968. The BLACK SHIELD vehicle entered and exited North Vietnam at 0358:28Z and 0407:14Z. The mission vehicle encountered a SAM reaction at approximately 0405Z. Figure 1 shows the mission route and associated events.

There was no indication of surface-to-surface missile (SSM) activity in the photographed areas. The BLACK SHIELD vehicle photographed 176 North Vietnamese COMIREX targets plus 16 bonus (non-COMIREX) targets.

Figure 1



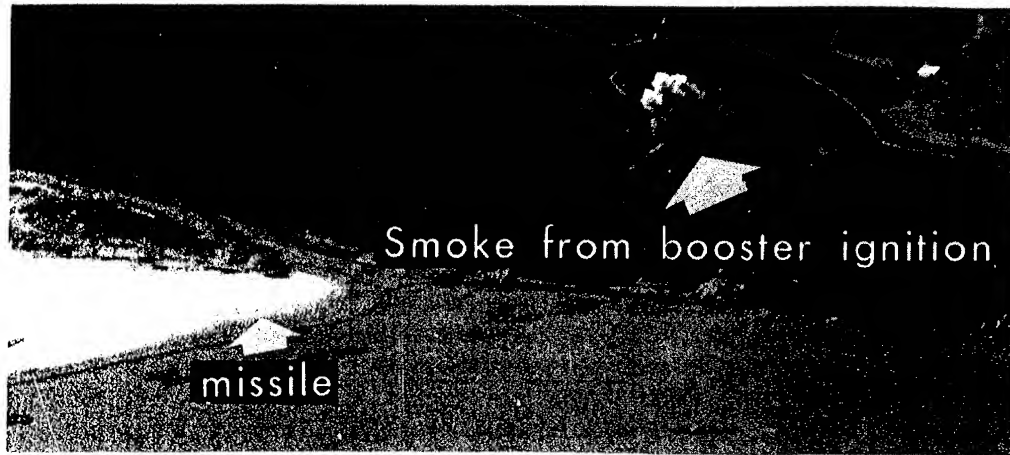
90202 4-68 CIA

~~TOP SECRET~~ TRINE OXCART
Handle via BYEMAN-COMINT Control Systems Jointly

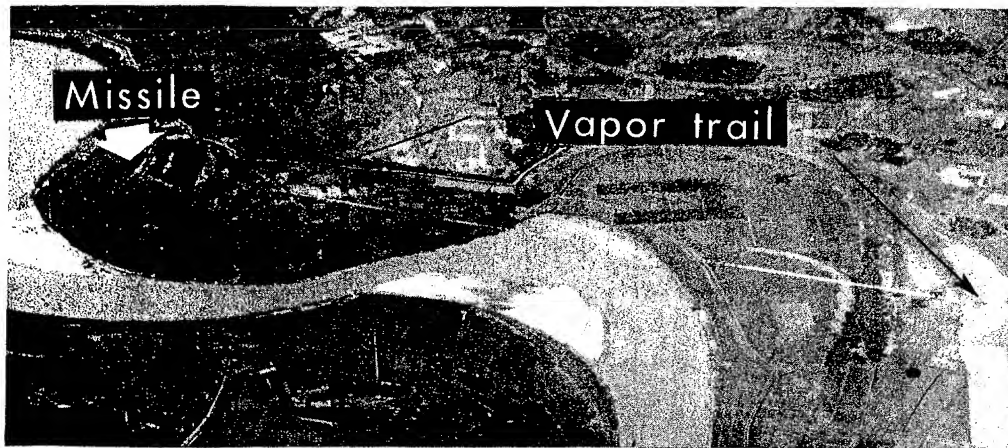
Of the 176 COMIREX targets photographed, 139 were North Vietnamese SA-2 sites, 12 of which were occupied. The mission vehicle also photographed a number of probable cave defense sites near Hanoi and Haiphong.

The third [redacted] signal qualified as a valid threat and activated the Mad Moth and Blue Dog BLACK SHIELD jammers. Correlation and analysis of all available data indicate that SAM site 267 (21°05'N, 105°44'E) launched a missile at the BLACK SHIELD vehicle at 0405:02Z. Figure 2 presents three photographs: one of smoke over site 267; a second of the launched missile, missile vapor trail and missile burn-out; and the third of missile detonation. Missile trajectory analysis from photography indicates the missile's approach to the mission vehicle was no closer than 8,000 feet and probably was much greater.

Figure 2. Photography of Missile Launched by Site 267



SA-2 launch



Flight & Missile Burnout

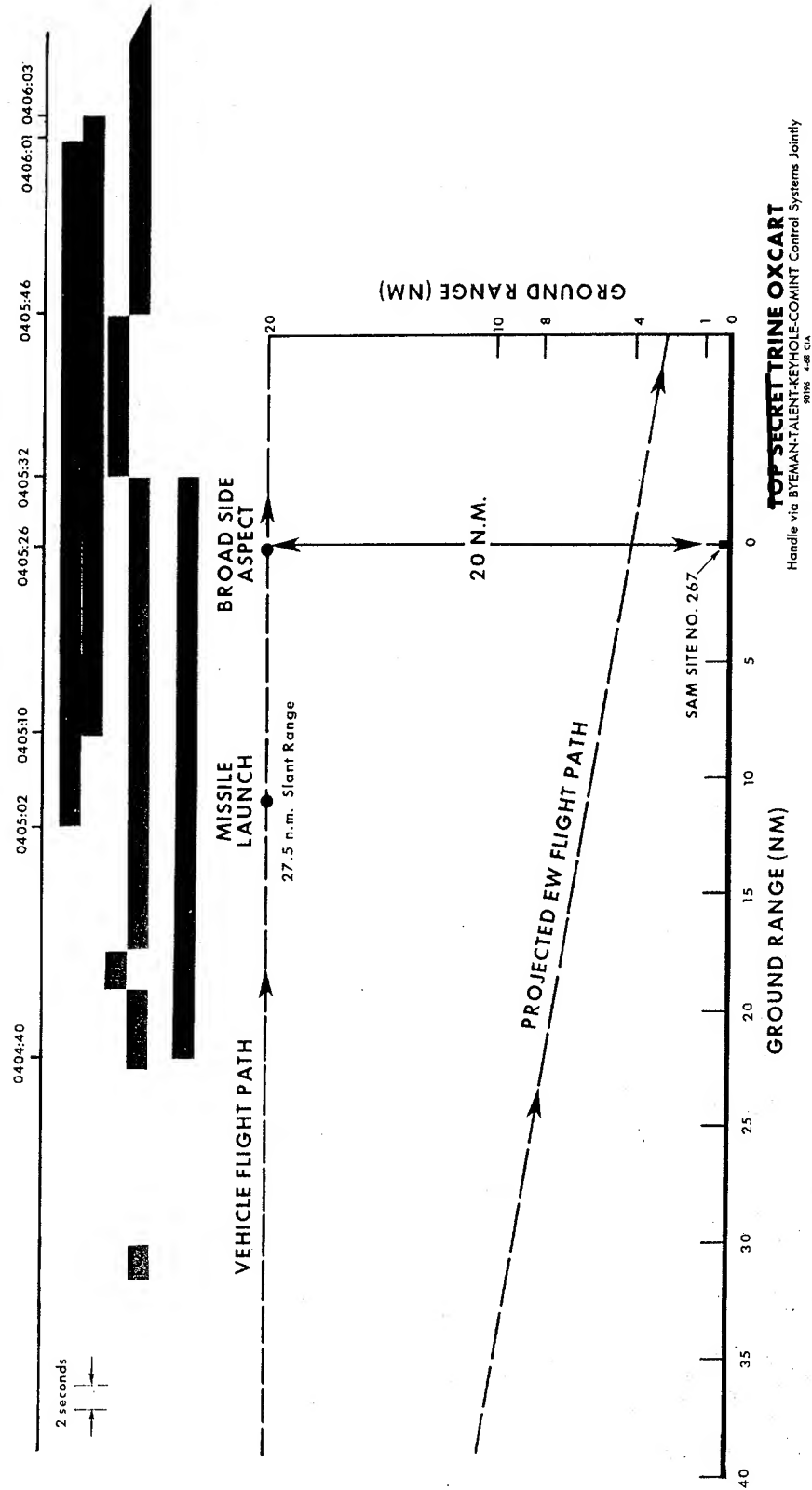


Warhead burst

5

6

Figure 3. Signal & Vehicle Flight Environment



~~TOP SECRET TRINE OXCART~~

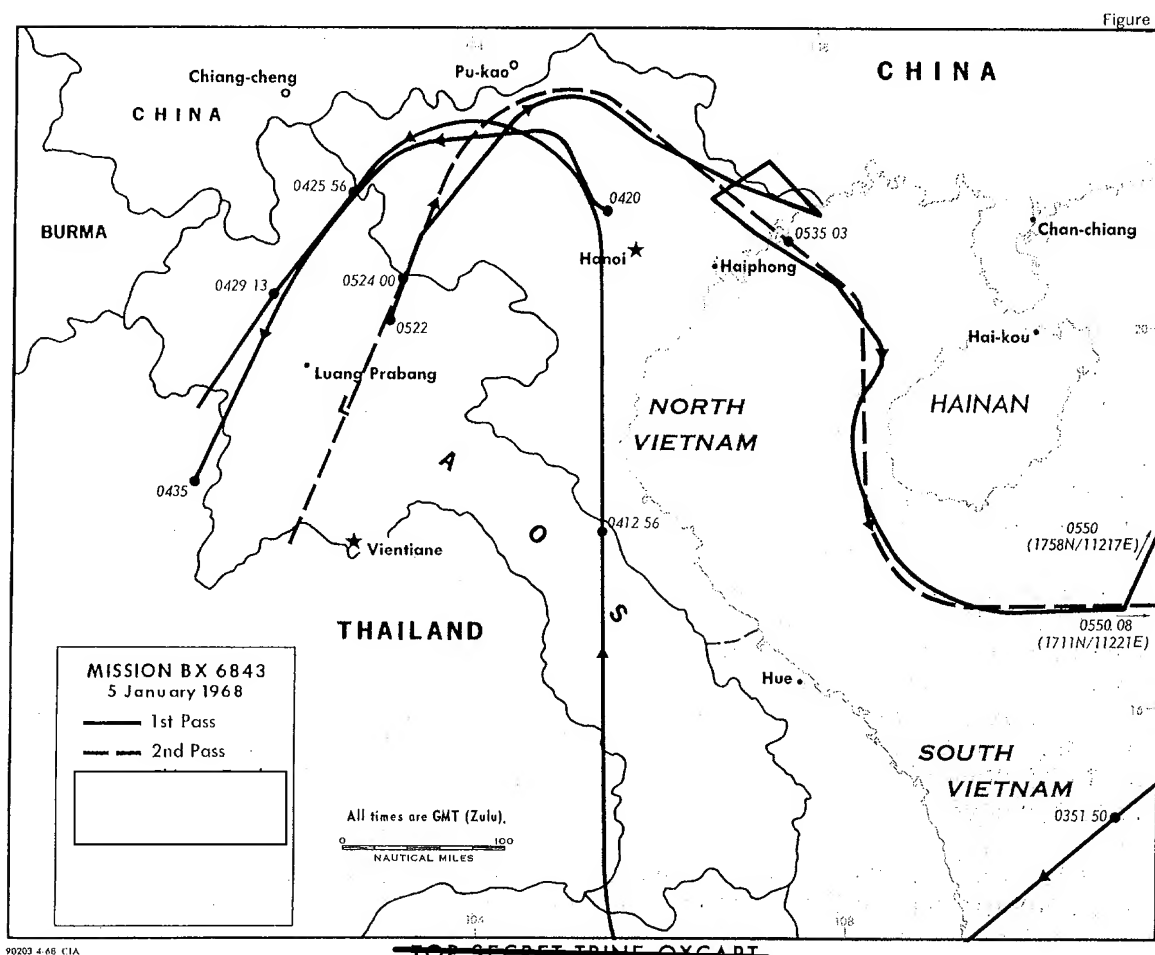
Handle via BYEMAN-TALENT-KEYHOLE-COMINT Control Systems Jointly
WITH 4-48 CIA



Strike/jamming activity during the overflight period was moderate and restricted to the Haiphong area.

BX6843

This BLACK SHIELD mission was a double-pass overflight of North Vietnam flown on 5 January 1968. The vehicle entered and exited North Vietnam at



0412:56Z and 0425:56Z on its first pass, and at 0524:00Z and 0535:03 on its second pass. Figure 4 is a presentation of the flight route and associated events.

Two suspect SS (cruise) missile sites near Thanh Hoa were photographed, one containing a few small unidentified objects and the other unoccupied. The BLACK SHIELD vehicle photographed 233 [redacted] North Vietnamese COMIREX targets plus 10 bonus (non-COMIREX) targets. Of the 233 COMIREX targets photographed, 182 were North Vietnamese SA-2 sites. Fifteen of these sites were occupied. This mission also provided photography of five of North Vietnam's major airfields and coverage of almost all of the rail network.

[redacted]
None of these signals appeared to be tracking the mission vehicle, and no defensive system was activated. Initial EW tracking was accomplished by [redacted]

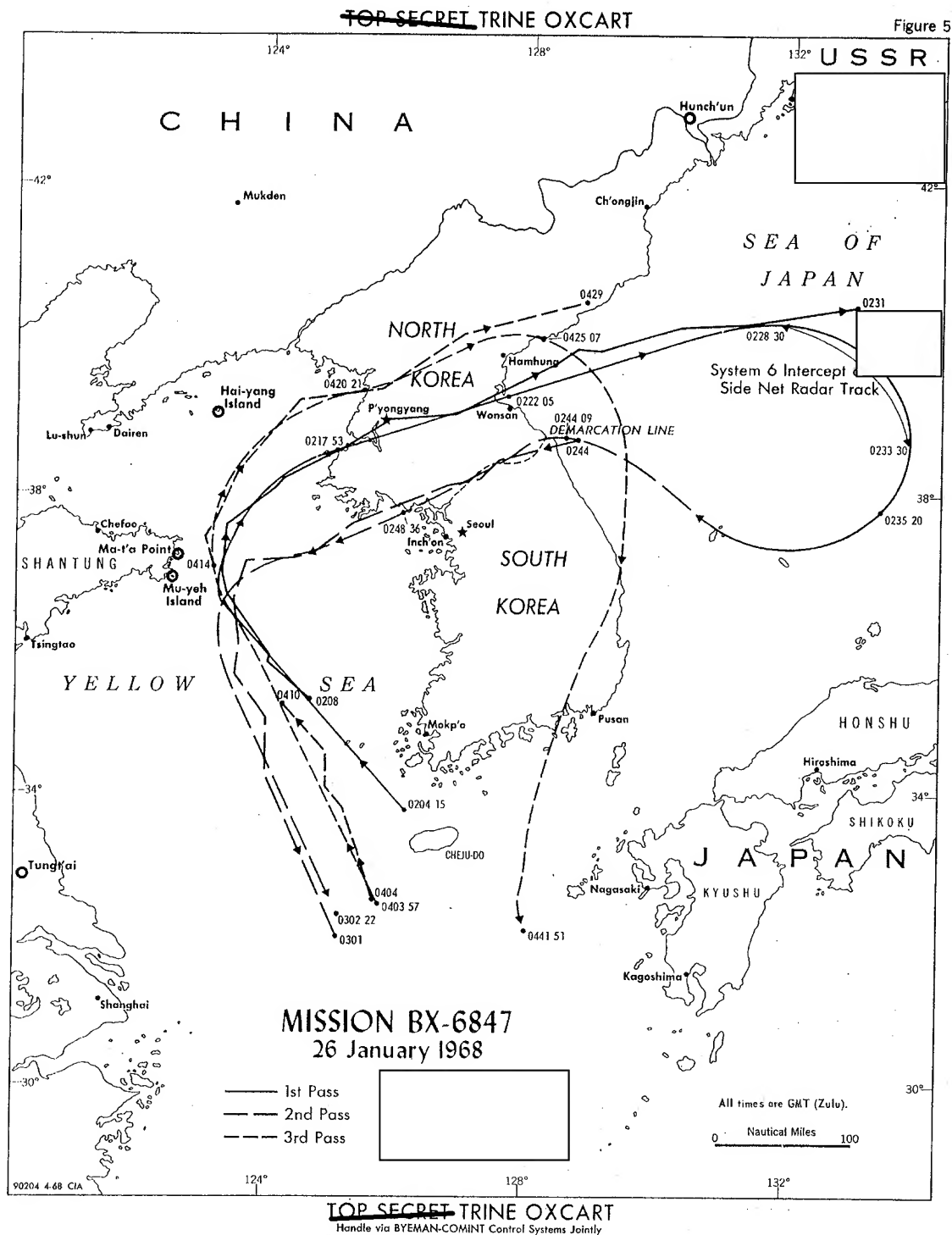
There was little or no strike/jamming during the overflight period.

BX6847

BLACK SHIELD mission BX6847 was a three-pass, high-altitude reconnaissance mission flown over North Korea on 26 January 1968. The mission vehicle was over the North Korean land mass on its first pass from 0217:53 to 0222:05, on the second pass from 0244:09 to 0248:36, and on the third pass from 0420:21 to 0425:07. Figure 5 presents the mission flight path and associated air surveillance events.

The BLACK SHIELD vehicle photographed 82 North Korean [redacted] COMIREX targets and 837 bonus targets. The mission obtained comprehensive baseline coverage of most of North Korea's armed forces and industry as well as large portions of the transportation system. The USS Pueblo and three new guided missile patrol boats (Komar PTG) were observed on photography of this mission. A BLACK SHIELD photograph of the USS Pueblo at anchor in a bay north of Wonsan is included in the examples of mission photography at the end of this report.

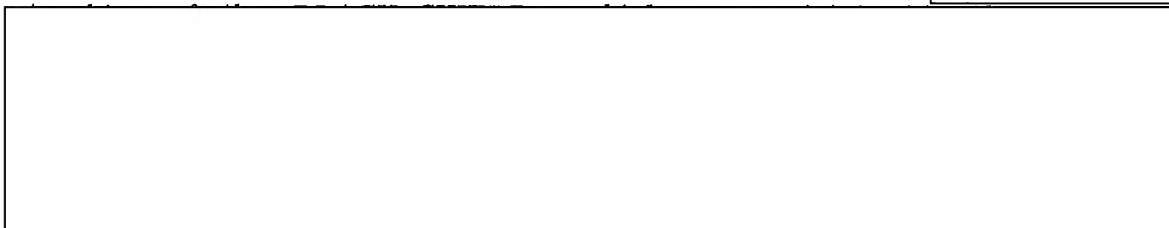
There was no indication of a hostile weapons reaction; no defensive system was activated during the overflight. [redacted]



pass at 0416:45 and exited at 0424:49. Overflight of the DMZ occurred from 0520:50 to 0521:46. Figure 6 is a plot of the mission route and associated tracking.

A rapid deterioration of weather over the target area resulted in little useable photography.

There was no indication of a hostile weapons reaction, and no electronic defensive equipment was activated during the overflight.

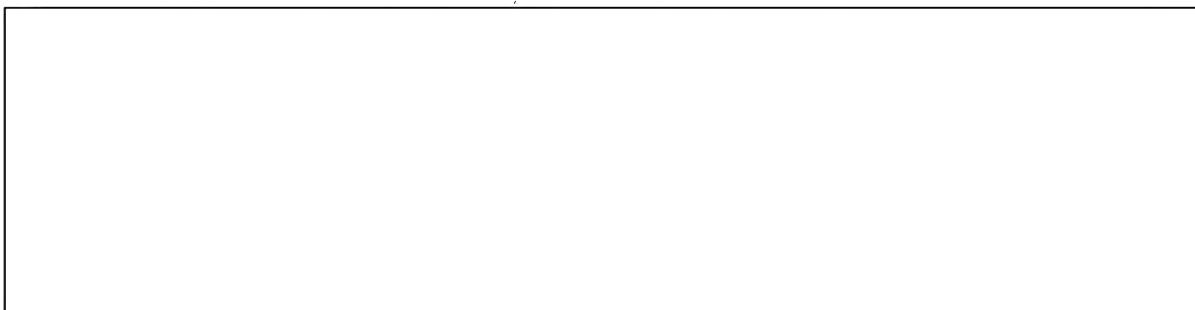


There was little or no strike/jamming activity during the overflight period.

BX6853

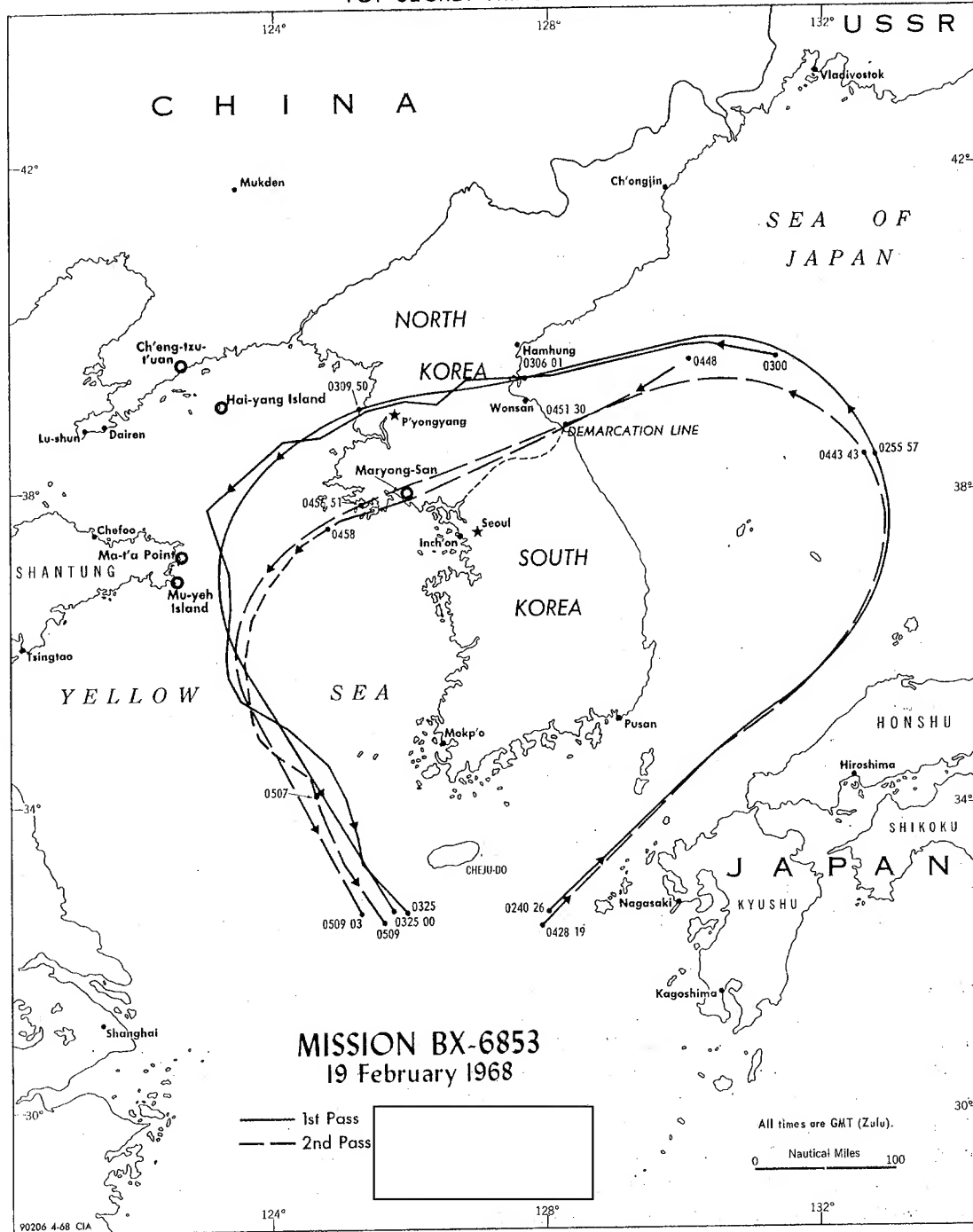
BLACK SHIELD mission BX6853 was a two-pass reconnaissance mission flown over North Korea on 19 February 1968. The mission vehicle penetrated and exited the North Korean land mass on its first pass at 0306:01 and 0309:50, and on its second pass at 0451:30 and 0456:51. Figure 7 is a plot indicating the mission route and related events.

The BLACK SHIELD vehicle photographed 84 North Korean COMIREX targets plus 89 bonus targets. Scattered clouds covered 20 percent of the area photographed, concealing the area in which the USS Pueblo was photographed on mission BX6847. One new, occupied SA-2 site was identified near Wonsan.



~~TOP SECRET~~ TRINE OXCART

Figure 7



~~TOP SECRET~~ TRINE OXCART

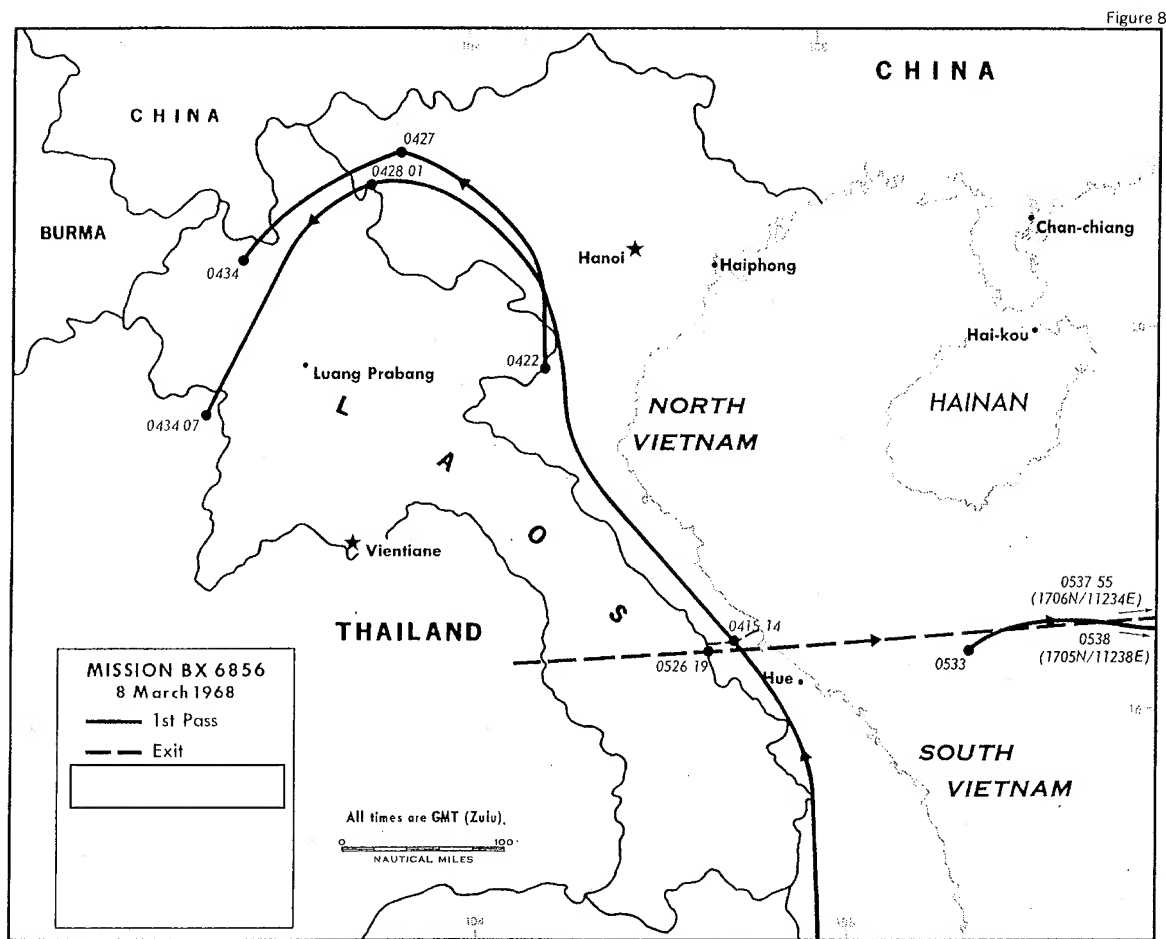
Handle via BYEMAN-COMINT Control Systems Jointly

BX6856

This BLACK SHIELD two-pass mission was flown over North Vietnam and the Demilitarized Zone on 8 March 1968. The mission vehicle entered North Vietnamese airspace on its first pass at 0415:14Z and exited at 0428:01Z. On the second pass it overflowed the DMZ area in the time period from 0526:14Z to 0527:10Z. Figure 8 is a presentation of the flight route and associated tracking.

Good quality photography was obtained of Khe Sanh and the Laos, Cambodia, and South Vietnamese border areas. No useable photography was obtained of North Vietnam due to adverse weather conditions.

There was no indication of a hostile weapons reaction, and no on-board defensive systems were activated.

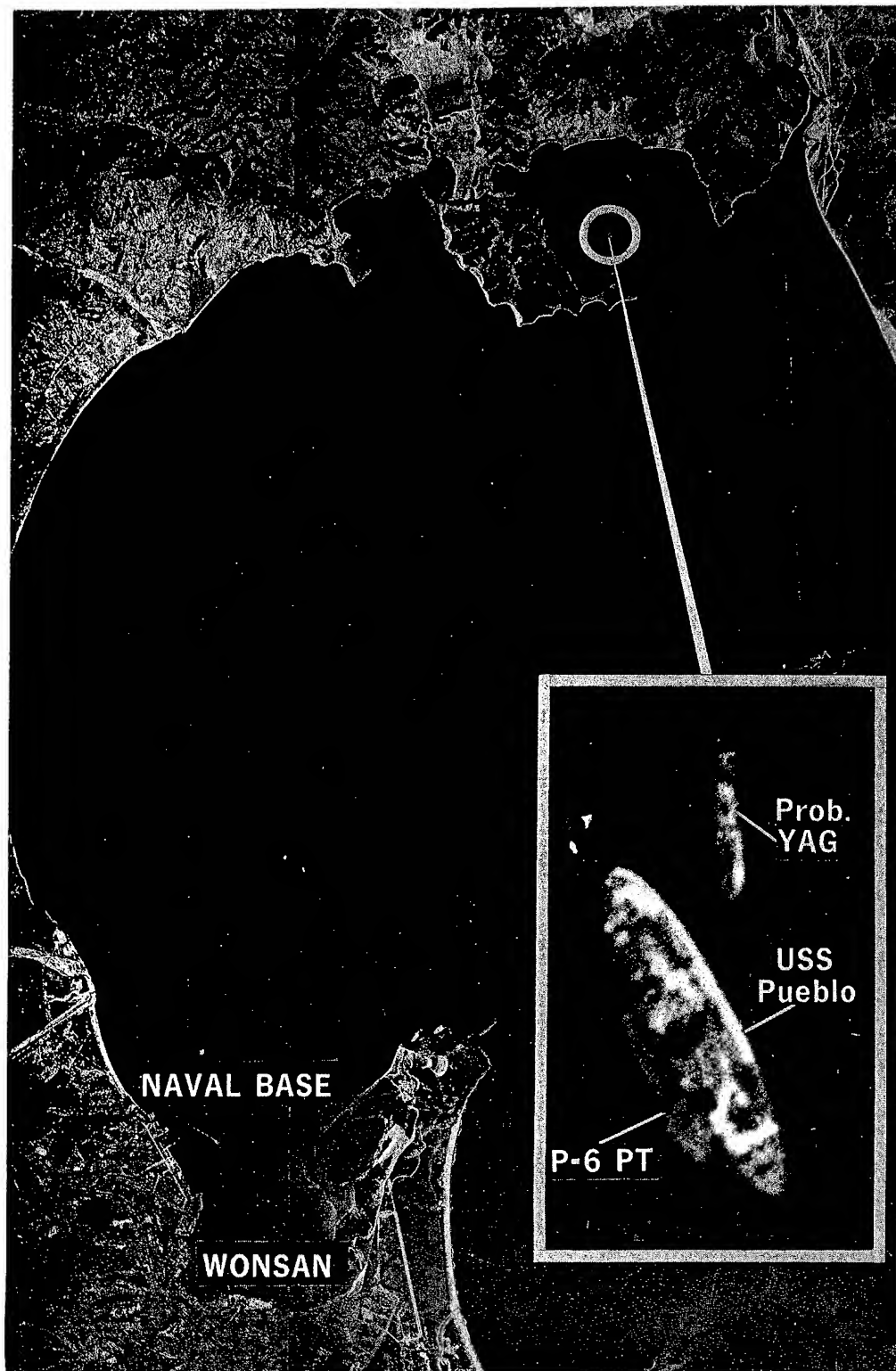


~~TOP SECRET~~ TRINE OXCART
Handle via BYEMAN-COMINT Control Systems Jointly



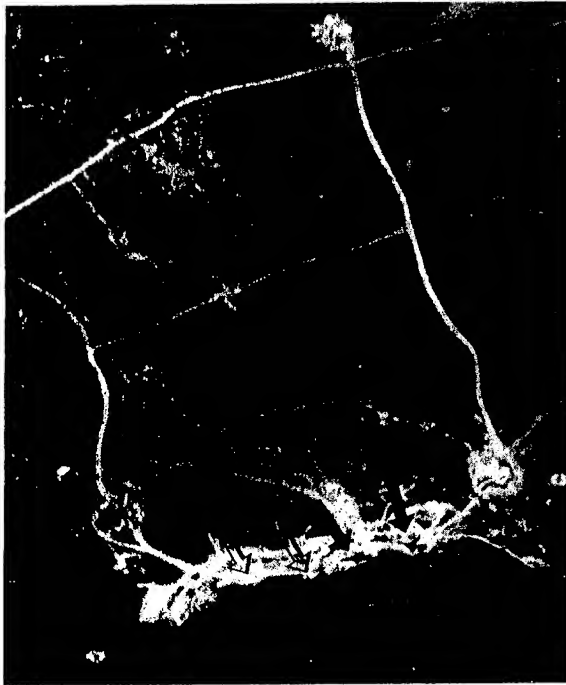
Little or no strike/jamming activity was conducted during the overnight period.

Figure 9.

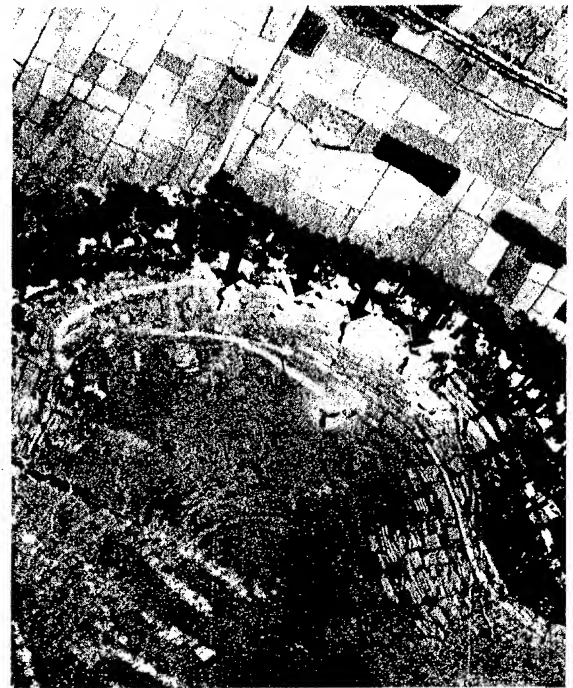


~~SECRET~~
NO FOREIGN DISSEM
90199 4-68 CIA

Figure 10. Cave Defense Sites



← Early-Stage Construction
← Initial-Stage Construction



← Early-Stage Construction



← Parapet



← Early-Stage Construction

~~SECRET~~
NO FOREIGN DISSEM
90197 4-68 CIA

Figure 11. Vinh Airfield



NO IMAGE
ON
PAGE 18

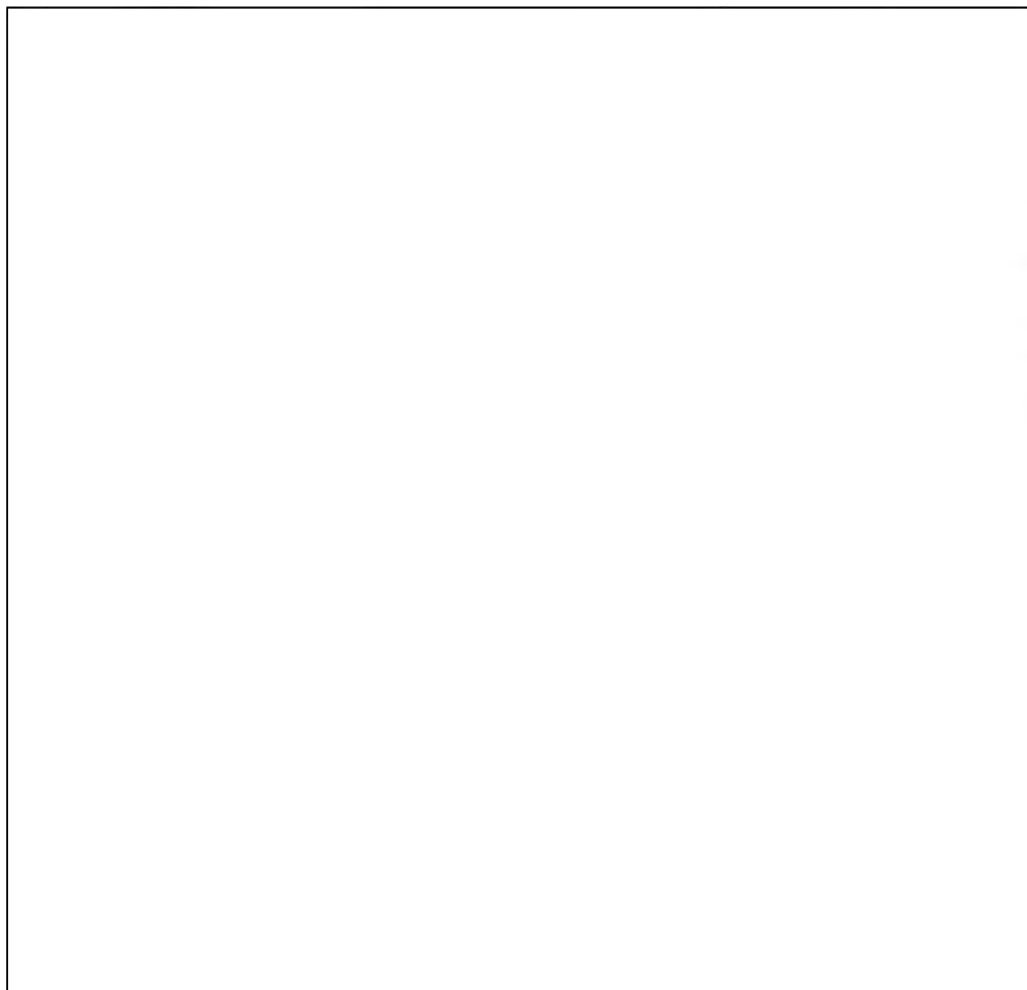
APPENDIX I

BLACK SHIELD Operational Missions Alerted
Between 1 January and 31 March 1968

| <u>MISSION NO.</u> | <u>DATE</u> | <u>REMARKS</u> |
|--------------------|--------------|--------------------------|
| BX6842 | 3 Jan. 1968 | Flown |
| BX6843 | 4 Jan. 1968 | Flown |
| BX6844 | 6 Jan. 1968 | Cancelled due to weather |
| BX6845 | 19 Jan. 1968 | Cancelled due to weather |
| BX6846 | 20 Jan. 1968 | Cancelled due to weather |
| BX6847 | 25 Jan. 1968 | Flown (3 Passes) |
| (Korea) BX6848 | 29 Jan. 1968 | Cancelled due to weather |
| BX6849 | 9 Feb. 1968 | Cancelled due to weather |
| BX6850 | 14 Feb. 1968 | No Approval |
| (Korea) BX6851 | 15 Feb. 1968 | Flown |
| BX6852 | 16 Feb. 1968 | Cancelled due to weather |
| BX6853 | 18 Feb. 1968 | Flown |
| (Korea) BX6854 | 27 Feb. 1968 | Cancelled due to weather |
| BX6855 | 5 Mar. 1968 | Cancelled due to weather |
| BX6856 | 7 Mar. 1968 | Flown |

APPENDIX II

COMIREX Targets Covered by BLACK SHIELD Missions over North Korea
1 January - 31 March 1968

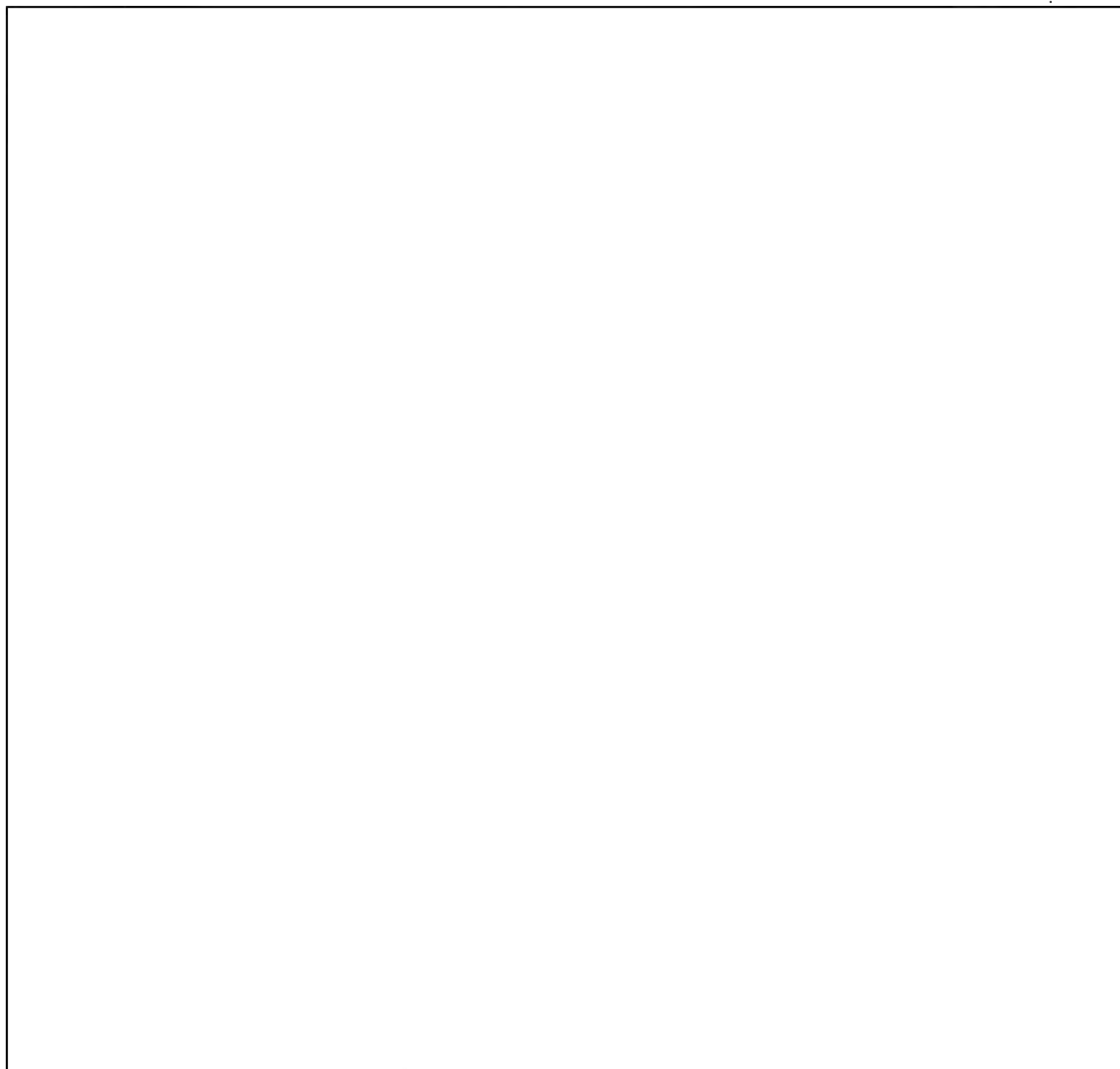


| Mission Number | |
|----------------|----|
| 47 | 53 |
| X | |
| | X |
| X | X |
| X | |
| X | X |
| X | |
| X | |
| X | X |
| X | X |
| X | X |
| X | X |
| X | |
| X | X |
| X | |
| X | X |

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX II (continued)



| | |
|----------------|----|
| Mission Number | |
| 47 | 53 |

| | |
|---|---|
| X | X |
|---|---|

X

X

X

X

X

X

X

X

X

X

X

X

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET TRINE OXCART~~

APPENDIX II (continued)

| Mission Number | 47 | 53 |
|----------------|----|----|
| | X | X |
| | X | |
| | X | |
| | X | X |
| | X | |
| | | |
| | X | X |
| | X | |
| | X | X |
| | | X |
| | | X |
| | | X |
| | | X |
| | X | |
| | X | |

~~TOP SECRET TRINE OXCART~~

~~TOP SECRET TRINE OXCART~~

BYE-1330/68

APPENDIX II (continued)

| | |
|----------------|----|
| Mission Number | 53 |
| 47 | |

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

~~TOP SECRET~~ TRINF. OXCART

APPENDIX II (continued)

Mission Number
47 53

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

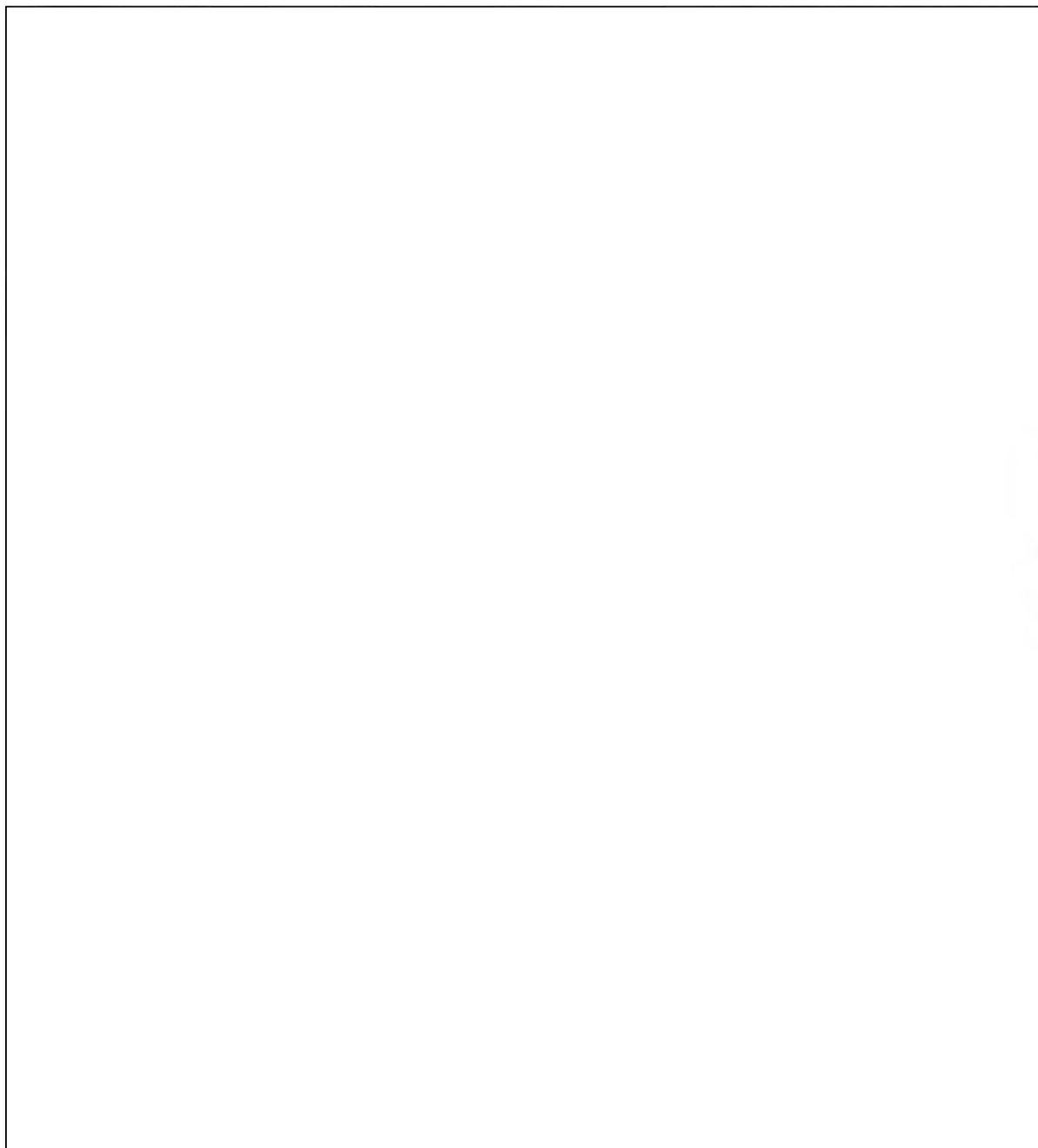
X

X

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX II (continued)



Mission Number
47 53

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

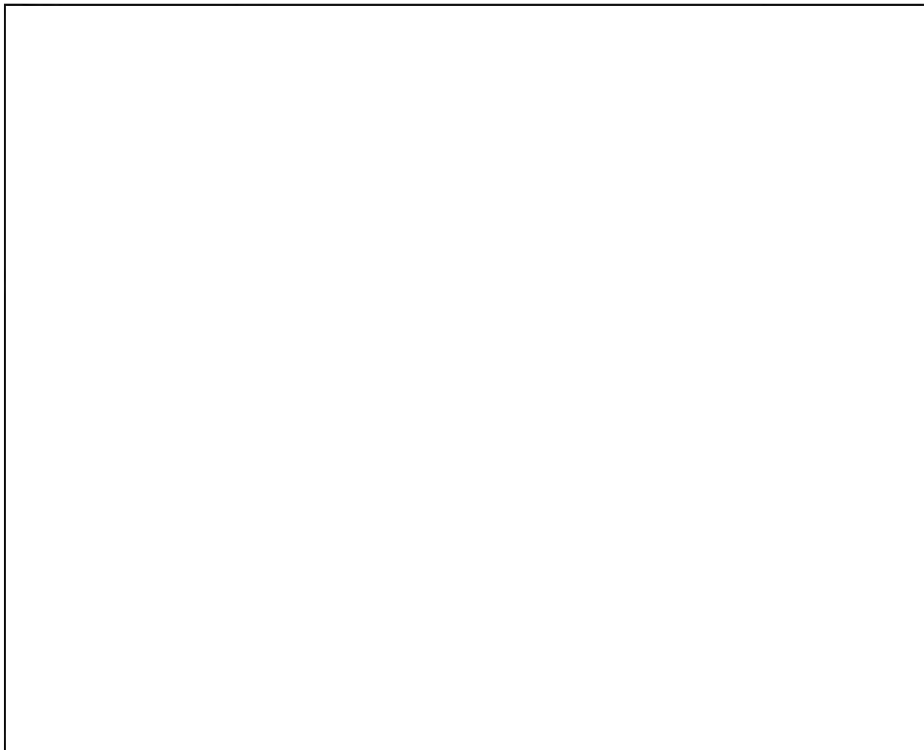
X

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX II (continued)



Mission Number
47 53

X

X

X

X

X

X

X

X

X

X

X

X

X

X

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

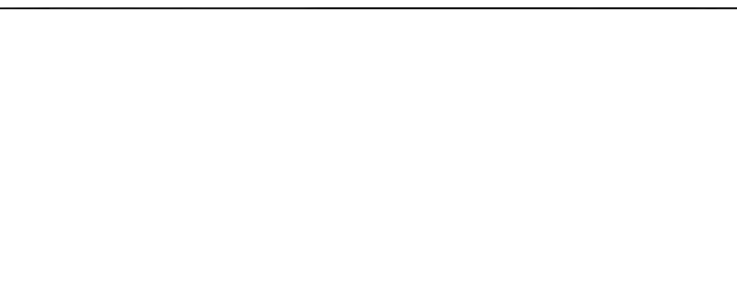
APPENDIX III

COMIREX Targets Covered by BLACK SHIELD Missions over North Vietnam*
1 January - 31 March 1968

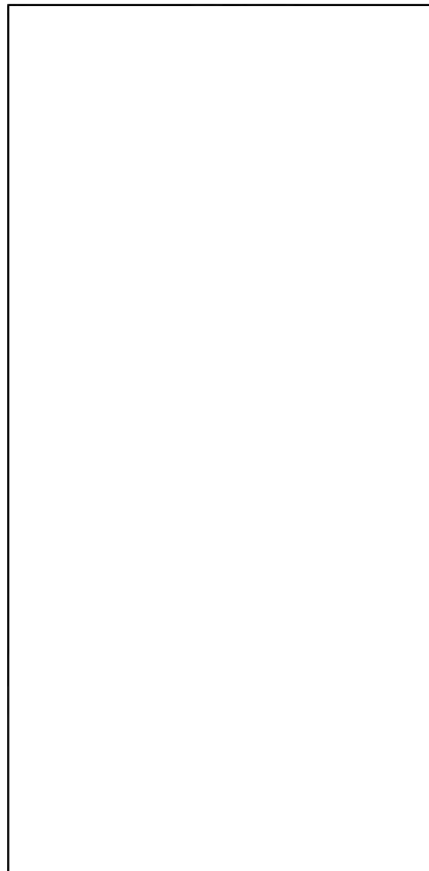
COMIREX
Number

Target

Mission Number
42 43



Hanoi SAM Search
Lao Cai SAM Search
Dien Bien Phu SAM Search
Vinh SAM Search



X X
X X

Hanoi SAM Site A-10-2

X X

*Bad weather precluded photography of targets on BLACK SHIELD Missions BX6851 and BX6856.

EO 12958 3.3(b) (1)
(N)

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

COMIREX
Number

APPENDIX III (continued)

| COMIREX Number | Target | Mission Number | |
|-------------------|-----------------------|----------------|----|
| | | 42 | 43 |
| | Hanoi SAM Site A-19-2 | X | X |
| | Hanoi SAM Site A-29-2 | X | X |
| | Hanoi SAM Site B-04-2 | X | X |
| | Hanoi SAM Site B-12-2 | X | X |
| | Hanoi SAM Site B-25-2 | | X |
| | Hanoi SAM Site B-29-2 | X | X |
| | Hanoi SAM Site B-30-2 | X | X |
| | Hanoi SAM Site C-29-2 | X | X |
| | Hanoi SAM Site C-30-2 | X | X |
| | Hanoi SAM Site D-19-2 | | X |
| | Hanoi SAM Site B-17-2 | | X |
| | Hanoi SAM Site B-21-2 | | X |
| | Hanoi SAM Site C-28-2 | X | X |
| | Hanoi SAM Site D-31-2 | X | X |
| | Hanoi SAM Site A-11-2 | X | X |
| | Hanoi SAM Site A-24-2 | X | X |

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
Number

Mission Number 42 43

Target

Hanoi SAM Site D-31A-2

Hanoi SAM Site D-16-2

Hanoi SAM Site D-36-2

Hanoi SAM Site C-06-2

Hanoi SAM Site C-07-2

Hanoi SAM Site D-31B-2

Hanoi SAM Site E07-2

Yen Bai SAM Site B-09-2

Yen Bai SAM Site C-09-2

Haiphong SAM Site A-29-2

Haiphong SAM Site A-20-2

Haiphong SAM Site A-17-2

Haiphong SAM Site B-01-2

Haiphong SAM Site A-29A-2

X

X

X

X

X

X

X

X

X

X

X

X

~~TOP SECRET TRINE OXCART~~

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

COMIREX
Number

APPENDIX III (continued)

| | COMIREX Number | Target | Mission Number | |
|--|-------------------|--------------------------|----------------|----|
| | | | 42 | 43 |
| | | Yen Bai SAM Site B-12-2 | X | X |
| | | Yen Bai SAM Site C-10-2 | X | X |
| | | Yen Bai SAM Site B-11-2 | X | X |
| | | Yen Bai SAM Site C-03-2 | X | X |
| | | Yen Bai SAM Site C-07-2 | X | X |
| | | Yen Bai SAM Site C-09A-2 | | |
| | | Yen Bai SAM Site C-17-2 | X | X |
| | | Yen Bai SAM Site B-06-2 | X | X |
| | | Yen Bai SAM Site C-04-2 | X | X |
| | | Yen Bai SAM Site B-05-2 | X | X |
| | | Yen Bai SAM Site B-06A-2 | X | X |
| | | Yen Bai SAM Site B-10-2 | X | X |
| | | Yen Bai SAM Site B-11A-2 | X | X |

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
Number

Target

Mission Number
42 43

Haiphong SAM Site B-33-2
Haiphong SAM Site B-06-2
Haiphong SAM Site C-32-2
Haiphong SAM Site C-32A-2
Haiphong SAM Site B-28-2
Haiphong SAM Site B-30-2
Haiphong SAM Site A-07-2
Haiphong SAM Site A-23-2
Haiphong SAM Site A-31-2
Haiphong SAM Site A-33-2

| | | |
|---|---|---|
| X | X | X |
| X | X | X |
| | | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |
| X | X | X |

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
Number

| COMIREX Number | Target | Mission Number 42 | Mission Number 43 |
|-------------------|----------------------------|----------------------|----------------------|
| | Haiphong SAM Site C-30-2 | X | X |
| | Haiphong SAM Site C-28-2 | X | X |
| | Haiphong SAM Site A-02-2 | X | X |
| | Haiphong SAM Site A-17A-2 | X | |
| | Haiphong SAM Site D-35-2 | X | X |
| | Haiphong SAM Site A-33A-2 | X | |
| | Thanh Hoa SAM Site B-28-2 | | X |
| | Thanh Hoa SAM Site C-02-2 | | X |
| | Thanh Hoa SAM Site B-01-2 | | X |
| | Thanh Hoa SAM Site B-02-2 | | X |
| | Thanh Hoa SAM Site | | |
| | Thanh Hoa SAM Site D-04-2 | | X |
| | Thanh Hoa SAM Site C-03-2 | | X |
| | Thanh Hoa SAM Site C-02A-2 | | X |
| | Thanh Hoa SAM Site A-17-2 | | X |

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
Number

Mission Number
42 43

Target

Thanh Hoa SAM Site C-04-2
Thanh Hoa SAM Site D-02-2
Thanh Hoa SAM Site C-01-2
Thanh Hoa SAM Site D-03-2
Thanh Hoa SAM Site D-03A-2
Thanh Hoa SAM Site A-19-2

Thanh Hoa SAM Site B-28A-2
Thanh Hoa SAM Site B-27-2
Thanh Hoa SAM Site A-14-2

Thanh Hoa SAM Site D-20-2
Thanh Hoa SAM Site D-20A-2
Thanh Hoa SAM Site A-17A-2
Thanh Hoa SAM Site A-13-2
Hanoi SAM Site D-04-2

X
X
X
X
X
X

X
X
X

X
X

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
Number

Mission Number
42 43

Target

Hanoi SAM Site C-30E-2
Hanoi SAM Site B-30A-2
Hanoi SAM Site C-30A-2
Hanoi SAM Site D-03-2
Hanoi SAM Site D-04-2
Hanoi SAM Site A-17A-2
Hanoi SAM Site C-30C-2
Hanoi SAM Site C-01-2
Hanoi SAM Site C-05-2
Hanoi SAM Site C-04-2
Hanoi SAM Site C-02-2
Hanoi SAM Site C-04A-2
Hanoi SAM Site C-01A-2
Hanoi SAM Site B-33-2
Hanoi SAM Site D-35-2
Hanoi SAM Site C-06A-2

X X
X X
X X
X X
X X
X X
X X
X X
X X
X X
X X
X X
X X
X X
X X
X X
X X

EO 12958 3.3(b) (1) >25Yrs
(N)

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
Number

| | <u>Target</u> | <u>Mission Number</u> 42 43 |
|--|--------------------------|--------------------------------|
| | Hanoi SAM Site C-13-2 | X X |
| | Hanoi SAM Site C-11-2 | X X |
| | Hanoi SAM Site C-12-2 | X X |
| | Hanoi SAM Site C-30D-2 | X X |
| | Hanoi SAM Site B-07-2 | X X |
| | Hanoi SAM Site D-06-2 | X X |
| | Hanoi SAM Site C-30E-2 | X X |
| | Hanoi SAM Site B-34-2 | |
| | Bac Can SAM Site C-22-2 | X X |
| | Bac Can SAM Site B-20-2 | X X |
| | Bac Can SAM Site C-20-2 | X X |
| | Bac Can SAM Site C-19-2 | X X |
| | Hoa Binh SAM Site A-19-2 | X X |
| | Hoa Binh SAM Site B-20-2 | X X |
| | Hoa Binh SAM Site B-22-2 | X X |
| | Hoa Binh SAM Site B-17-2 | X X |

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
Number

| COMIREX Number | Target | Mission Number | |
|-------------------|---------------------------|----------------|----|
| | | 42 | 43 |
| | Hoa Binh SAM Site C-17-2 | | X |
| | Hoa Binh SAM Site B-19-2 | | X |
| | Hoa Binh SAM Site D-27-2 | | |
| | Hoa Binh SAM Site D-28-2 | | |
| | Hoa Binh SAM Site A-04-2 | | |
| | Hoa Binh SAM Site B-08-2 | | X |
| | Hoa Binh SAM Site C-27-2 | | |
| | Hoa Binh SAM Site B-02-2 | X | X |
| | Hanoi B-08-2 | X | X |
| | Hoa Binh SAM Site B-04-2 | X | X |
| | Hoa Binh SAM Site B03-2 | | |
| | Hoa Binh SAM Site B-08B-2 | | X |
| | Hoa Binh SAM Site B-10-2 | | X |
| | Haiphong SAM Site D-35A-2 | X | X |

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
Number

Mission Number
42 43

Target

Haiphong SAM Site B-25-2

Haiphong SAM Site A-29-B-2

Haiphong SAM Site A-26-2

Haiphong SAM Site A-22-2

Haiphong SAM Site A-25A-2

Vinh C-19-2

Vinh C-32-2

Vinh B-16-2

Vinh

Vinh

Vinh

Vinh C-32-2

X

X

X

X

X

X

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

| COMIREX Number | Target | Mission Number 42 43 |
|-------------------|--------------|-------------------------|
| <div></div> | Vinh | |
| | Vinh D-32-2 | |
| | Vinh A-07-2 | X |
| | Vinh | |
| | Vinh C-32A-2 | X |
| | Vinh C-30-2 | X |
| | Vinh C-32B-2 | X |
| | Vinh B-21-2 | |
| | Vinh B-29-2 | X |
| | Vinh B-32-2 | X |
| | Vinh A-01-2 | |
| | Vinh A-36-2 | |
| | Vinh A-11-2 | X |
| | Vinh C-31-2 | X |
| | Vinh A-01A-2 | X |
| | Vinh D-35-2 | X |

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

| COMIREX Number | Target | Mission Number 42 | Mission Number 43 |
|-------------------|------------------------|----------------------|----------------------|
| | Vinh C-31A-2 | | X |
| | Vinh A-25-2 | X | X |
| | Hanoi SAM Site B-01-2 | X | X |
| | Hanoi SAM Site C-33-2 | X | X |
| | Hanoi SAM Site B-01A-2 | X | X |
| | Hanoi SAM Site A-33-2 | X | X |
| | Hanoi SAM Site D-36A-2 | X | X |
| | Hanoi SAM Site C-01B-2 | X | X |
| | Hanoi SAM Site A-01-2 | X | X |
| | Hanoi SAM Site C-03-2 | | |
| | Hanoi SAM Site C-03A-2 | X | X |
| | Hanoi SAM Site A-14-2 | X | X |
| | Hanoi SAM Site C-32-2 | X | X |
| | Hanoi SAM Site B-32-2 | X | X |
| | Hanoi SAM Site B-07A-2 | X | X |
| | Hanoi SAM Site C-17-2 | | X |

~~TOP SECRET~~ TRINE OXCART

APPENDIX III (continued)

COMIREX
Number



| Target | Mission Number | |
|----------------------------|----------------|----|
| | 42 | 43 |
| Hanoi SAM Site A-31-2 | X | X |
| Hanoi SAM Site C-17A-2 | | X |
| Hanoi SAM Site B-16-2 | X | X |
| Hanoi SAM Site E-22-2 | | X |
| Hanoi SAM Site C-17B-2 | | X |
| Thanh Hoa SAM Site C-03A-2 | | X |
| Thanh Hoa SAM Site B-01A-2 | | |
| Thanh Hoa SAM Site C-01A-2 | | |
| Thanh Hoa SAM Site C-04A-2 | | X |
| Thanh Hoa SAM Site D-21A-2 | | X |
| Thanh Hoa SAM Site B-01B-2 | | X |
| Thanh Hoa SAM Site D-21B-2 | | X |
| Thanh Hoa SAM Site A-17B-2 | | X |
| Thanh Hoa SAM Site D-21-B | | X |
| Hanoi SAM Site C-16-2 | | X |

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

| COMIREX Number | Target | Mission Number | |
|-------------------|------------------------|----------------|----|
| | | 42 | 43 |
| | Hanoi SAM Site A-05-2 | X | X |
| | Hanoi SAM SITE B-36B-2 | | |
| | Hanoi SAM Site C-03B-2 | X | X |
| | Hanoi SAM Site D-31C-2 | | |
| | Hanoi SAM Site C-05B-2 | X | X |
| | Hanoi SAM Site B-27-2 | X | X |
| | Hanoi SAM Site B-13-2 | X | X |
| | Hanoi SAM Site B-28-2 | X | X |
| | Hanoi SAM Site B-04A-2 | X | X |
| | Hanoi Prob. Site A | | |
| | Hanoi Prob. Site B | | |
| | Hanoi SAM Site C-01D-2 | X | X |
| | Hanoi SAM Site C-01E-2 | X | X |
| | Hanoi SAM Site C-29A-2 | X | X |
| | Hanoi SAM Site B-34A-2 | X | X |
| | Hanoi SAM Site D-35-2 | | |

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
Number

Mission Number
42 43

Target

Vinh SAM Site A-01A-2

Hanoi SAM Site A-15-2

Hanoi SAM Site A-34-2

Hanoi SAM Site B-36-2

Hanoi SAM Site B-30B-2

Hanoi SAM Site A-29-A

Hanoi SAM Site A-34-A

Hanoi SAM Site A-22-2

Hanoi SAM Site A-15A-2

Hanoi SAM Site A-32-2

Hanoi SAM Site A-30-2

Hanoi SAM Site A-24A-2

X X

X X

X X

X X

X X

X X

X X

X X

X X

X X

X

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
NumberMission Number
42 43Target

| | | | |
|--|--|---|---|
| | Vinh SAM Site A-25-2 | | |
| | Hanoi Probable SAM Equipment Training Area | | |
| | Nan San SAM Site A-12-2 | | |
| | Nan San SAM Site C-12-2 | | |
| | Nan San SAM Site D-13-2 | | |
| | Hanoi SAM Site | | |
| | Hanoi SAM Site A-01A-2 | X | X |
| | Hanoi SAM Site A-35-2 | | |
| | Hanoi SAM Site B-23-2 | | |
| | Hoa Binh SAM Site D-27-2 | | |
| | Haiphong SAM Site A-25-2 | | |
| | Haiphong SAM Site B-36-2 | X | X |
| | Haiphong SAM Site A-16-2 | | |
| | Haiphong SAM Site A-02A-2 | | |
| | Haiphong SAM Site | X | |
| | Thanh Hoa SAM Site D-31B-2 | | |

*Unnumbered.

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

| COMIREX Number | Target | Mission Number | |
|-------------------|----------------------------|----------------|----|
| | | 42 | 43 |
| * | Ban Xom Lom SAM Site | | |
| * | Chin Chou SAM Site (China) | | |
| | Hai Kou Airfield | | |
| | Ling Shui Airfield | | |
| | Meng Tzu Airfield West | | |
| | Haiphong/Cat Bi Airfield | X | X |
| | Haiphong/Kien An Airfield | X | X |
| | Hanoi/Bac Mai Airfield | X | X |
| | Hanoi/Gia Lam Airfield | X | X |
| | Phuc Yen Airfield | X | X |
| | Lang Son Airfield | X | X |
| | Kep Airfield | X | X |
| | Ning Ming Airfield | X | X |
| | Chia Lai Shih Airfield | | |
| | Ping Yuan Chieh Airfield | | |
| | Tien Yang Airfield | | |

*Unnumbered.

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
NumberMission Number
42 43Target

Yen Bai Airfield

X X

Hoa Lac Airfield

X X

Bai Thuong Airfield (2C0987)

X X

Tho Khoi Helicopter Dispersal Area

Kep Ha Airfield

Hanoi Helicopter Dispersal Area

Hoa Lac Helicopter Dispersal Area

That Khe Air Facility

Pei Hai Naval Facility

Hsin Hsing Naval Facility

Port Wallut Naval Base

Haiphong Naval Base and Port Facilities

Cam Qha Port Facilities

Pai Lung Port Facilities

*Unnumbered.

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
Number

Mission Number
42 43

Target

| | | |
|-----------------------------------|---|---|
| Cam Pha Port Facilities | X | X |
| Hon Gai Port Facilities | X | X |
| Ha Tou Shipyard | X | X |
| Ben Thuy Coastal Transport Point | X | X |
| Pei Li Port Facilities | X | X |
| Lam Dong Naval Dispersal Facility | X | X |
| Swatow PGM-Hanoi Area | | |
| Thanh Hoa BW/CW Research Facility | | |
| Lai Chau Complex | | |
| Ma Li Po Supply Depot | | |
| Mengtsu Military Complex | | |
| Ping Hsing Ammunition Depot | | X |
| Ping Hsing Army Depot | | X |
| Ping Hsing Military Storage East | | X |

*

*

*Unnumbered.

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

COMIREX
Number

| COMIREX Number | Target | Mission Number | |
|-------------------|--|----------------|----|
| | | 42 | 43 |
| | Ping Hsiang Storage Area North | | X |
| | Chin Ping Infantry Division Headquarters A Barracks | | X |
| | Chin Ping Supply Depot NW | | X |
| | Ban Lot A Barracks | | |
| | Ha Giang Military Area | X | X |
| | Van Hoi Military Areas | X | X |
| | Wen Shan Army Barracks West | | |
| | Ho Kou Army Barracks North | X | |
| | Yen Shan Military Barracks and Storage Area | | |
| | Lang Son Army Barracks | | X |
| | Y Son Ammunition Depot | | |
| | Xom Hau A Army Supply Depot | X | |
| | Ngoc Thi Barracks Supply Depot | | |
| | Tai Xouan Army Barracks, Nam Vu | | |
| | Loc Binh Army Supply Depot | X | X |

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

| COMIREX Number | Target | Mission Number | |
|-------------------|-------------------------------------|----------------|----|
| | | 42 | 43 |
| | Yen Bai Ordnance Depot | | |
| | Thai Nguyen Army Supply Depot North | X | X |
| | Liu Tiao Pan Army Supply Depot | X | |
| | Bac Can Barracks A Supply Depot | | X |
| | Bac Giang Military Areas | X | X |
| | Mai Li Po Supply Depot | | X |
| | Tung Chia Army Barracks | | |
| | Ban Tchepone/NVN Special Area 1916 | X | X |
| | Ba Binh Special Area 2009 | X | X |
| | Ben Than Special Area 2013 | X | X |
| | Vinh An Special Area 2014 | X | X |
| | Vit Thu Lu/NVN Special Area | X | X |
| | Ha Huang tien Highway U.C. | X | X |
| | Tsi Ti Pao Road | | |
| | Wu Pu Chieh Road Construction | | |
| | Hanoi/Lao Cai Railroad Segment 2 | X | X |

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

COMIREX
Number

| COMIREX Number | Target | Mission Number | |
|-------------------|--------------------------------------|----------------|----|
| | | 42 | 43 |
| | Hanoi/Lao Cai Railroad Segment 1 | X | X |
| | Hanoi/Lao Cai Railroad Segment 3 | X | X |
| | Hanoi/Ping Hsiang Railroad Segment 2 | X | X |
| | Hanoi/Ping Hsiang Railroad Segment 1 | X | X |
| | Hanoi/Ping Hsiang Railroad Segment 3 | X | X |
| | Hanoi/Lao Cai Railroad Segment 4 | X | X |
| | Hanoi/Lao Cai Railroad Segment 5 | X | X |
| | An Cap Railroad Hanoi Thai Nguyen | X | X |
| | Ping Hsiang/Hanoi Railroad Segment 4 | | X |
| | Ho Kou Highway Segment, Route 24A | X | X |
| | Uong Bi Transformer Power Plant | | |
| | Tien Pao Highway Sec., Route 25A | | |
| | Chen Nan Kuan Highway Sec. | | X |
| | Ping Hsiang Complex | X | X |
| | Wen Shan Complex | | |
| | Dong Dang Railroad Yard | X | X |

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
Number

| | <u>Target</u> | <u>Mission Number</u> 42 43 |
|--|--|--------------------------------|
| | Phu Lang Thuong Complex | X X |
| | Cao Bang Military Complex | X X |
| | Lai Chau Complex | X X |
| | Lang Son Complex | X X |
| | Mon Cai Complex | X X |
| | Tien Yen Complex | X X |
| | Binh Lu Area | X |
| | Tuyen Quang Complex | X X |
| | Yen Bai Complex | X X |
| | Dien Bien Phu Complex | X X |
| | Kep Complex | |
| | Lao Cai Complex | X X |
| | Haiphong Railroad Station Classification Yard | |
| | Haiphong Railroad Station Classification Yard and Shops | X X |
| | Viet Tri Railroad Yard | X X |

~~TOP SECRET~~ TRINE

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

COMIREX
Number

*

Mission Number
42 43

| <u>Target</u> | X | X |
|---------------------------------------|---|---|
| Yen Vien Railroad Classification Yard | X | X |
| Thai Nguyen Rail Activity | | |
| Kep Railroad Yard | X | X |
| Highway Segment 10E | | |
| Haiphong Highway Bridge | | |
| Van Diem Battery Plant | | |
| Hanoi Railroad - A Highway Bridge | | |
| Haiphong Warehouse Area Port | | |
| Van Diem Vehicle Depot | | |
| Hai Duong Railroad Siding West | | |
| Hai Duong Railroad Station | | |
| Hgoc Kuyet Railroad Station | | |
| Ta Xa PPS North | | |
| Loi Dong Warehouse Area | | |
| Railroad Segment R-3-A | | |

*Unnumbered.

~~TOP SECRET~~ TRINE OXCART

~~TOP SECRET~~ TRINE OXCART

BYE-1330/68

APPENDIX III (continued)

| <u>COMIREX Number</u> | <u>Target</u> |
|---------------------------|---|
| * | Ping Hsiang Railroad Transporting Yard Station and Shops |
| * | Ho Kou Vehicle Park |
| * | Hsia Shih Storage Areas |
| * | Ping Hsiang Storage Area |
| * | Thai Nguyen Unidentified Construction Activity |
| * | Hanoi/Haiphong Railroad |
| * | Hanoi/Haiphong Railroad |
| * | Hanoi Transformer Power Plant |
| * | Haiphong Transformer Power Plant East |
| * | Haiphong Transformer Power Plant West |
| * | Viet Tri Transformer Power Plant |
| * | Hon Gai Transformer Power Plant |
| * | Bac Giang Transformer Power Plant |

*Unnumbered

Mission Number
42 43

~~TOP SECRET~~ TRINE OXCART

APPENDIX IV

